

What is Claimed is:

1. A photo mask for patterning a lightning rod comprising:
a shorting bar pattern and a plurality of pad patterns;
an outer lightning rod pattern connected to the shorting bar pattern;
5 an inner lightning rod pattern connected to one of the pad patterns;
projections from each of the outer and inner lightning rod patterns, and a fine pattern
connected between the projections; and,
a redundancy fine pattern connected between the pad patterns.

2. A photo mask for patterning a lightning rod comprising:
a shorting bar pattern and a plurality of pad patterns;
an outer lightning rod pattern connected to the shorting bar pattern;
an inner lightning rod pattern connected to one of the pad patterns; and,
projections from each of the outer and inner lightning rod patterns, and a fine pattern
in a '⚡' form connected between the projections.

3. A photo mask for patterning a lightning rod comprising:
a shorting bar pattern and a plurality of pad patterns; and,
a plurality of lightning rod patterns between the shorting bar pattern and each of the
20 pad patterns.

4. A photo mask as claimed in claim 3, wherein each lightning rod pattern includes;
an outer lightning rod pattern connected to the shorting bar,
an inner lightning rod pattern connected to the pad pattern, and
25 projections from the outer lightning rod pattern and the inner lightning rod pattern,

and a fine pattern connected between the projections.

5. A photo mask for patterning a lightning rod comprising:
a shorting bar pattern and a plurality of pad patterns;
5 an outer lightning rod pattern connected to the shorting bar pattern;
an inner lightning rod pattern connected to one of the pad patterns; and,
projections from each of the outer and inner lightning rod patterns, and a fine pattern
connected between centers of the projections.

6. A photo mask as claimed in claim 5, wherein a distance between the projections is
greater than a distance between the outer lightning rod pattern and the inner lightning rod
pattern.

7. A photo mask set for patterning a lightning pattern comprising:
a first photo mask having a shorting bar pattern and an outer lightning rod pattern
connected to the shorting bar pattern formed thereon; and,
a second photo mask having a pad pattern and an inner lightning rod pattern
connected to the pad pattern formed thereon.

8. A photo mask set as claimed in claim 7, wherein the first photo mask is a photo mask
for patterning a gate line, and the second photo mask is a photo mask for patterning a data
line.

9. A photo mask set for patterning a lightning pattern comprising:
a first photo mask including;

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a shorting bar pattern and a plurality of pad patterns,
an outer lightning rod pattern connected to the shorting bar pattern,
an inner lightning rod pattern connected to the pad pattern, and
projections from each of the outer and inner lightning rod patterns, and a fine

5 pattern connected between centers of the projections; and,

a second photo mask having a contact hole at a position matched to the fine pattern
on the first photo mask.

10. A photo mask set as claimed in claim 9, wherein the first photo mask is a photo mask
for patterning a gate line, and the second photo mask is a photo mask for patterning a pixel
electrode.

11. A photo mask for a liquid crystal display (LCD) panel, comprising:
first and second pad patterns for signal lines of the LCD panel;
first and second inner lightning rod patterns, each connected to a corresponding one
of the first and second pad patterns;

first and second inner lightning rod projections each extending from and connected to
a corresponding one of the first and second inner lightening rod patterns;

first and second outer lightning rod patterns;

20 first and second outer lightning rod projections each extending from and connected to
a corresponding one of the first and second outer lightening rod patterns;

a shorting bar connected to the first and second outer lightning rod patterns;

first and second fine patterns each connecting a corresponding one of the first and
second inner lightening rod projections to a corresponding one of the first and second outer

25 lightening rod projections; and

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a redundancy fine pattern connected between the first and second pad patterns.

12. A photo mask for a liquid crystal display (LCD) panel, comprising:

a pad pattern for a signal line of the LCD panel;

an inner lightning rod pattern connected to pad pattern;


an inner lightning rod projection extending from and connected to the inner
lightening rod pattern;

an outer lightning rod pattern;

an outer lightning rod projection extending from and connected to the outer
lightening rod pattern;

a shorting bar connected to the outer lightning rod pattern; and

a fine pattern connecting the inner lightening rod projection to the outer lightening
rod projection, wherein a length of the fine pattern is substantially greater than a distance
between the inner and outer lightening rod projections.

13. The photo mask of claim 12, wherein the fine pattern has a shape of “”

14. A photo mask for a liquid crystal display (LCD) panel, comprising:

a pad pattern for a signal line of the LCD panel;

a first inner lightning rod pattern connected to pad pattern;

a first inner lightning rod projection extending from and connected to the first inner
lightening rod pattern;

a first outer lightning rod pattern;

a first outer lightning rod projection extending from and connected to the first outer
lightening rod pattern;

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a second inner lightning rod pattern connected to the first outer lightning rod pattern;
a second inner lightning rod projection extending from and connected to the second
inner lightening rod pattern;

a second outer lightning rod pattern;

5 a second outer lightning rod projection extending from and connected to the second
outer lightening rod pattern;

a shorting bar connected to the second outer lightning rod pattern;

a first fine pattern connecting the first inner lightening rod projection to the first outer
lightening rod projection; and

10 a second fine pattern connecting the second inner lightening rod projection to the
second outer lightening rod projection.

15. A photo mask for a liquid crystal display (LCD) panel, comprising:

a pad pattern for a signal line of the LCD panel;

20 an inner lightning rod pattern connected to pad pattern;

an inner lightning rod projection extending from and connected to the inner
lightening rod pattern;

an outer lightning rod pattern;

an outer lightning rod projection extending from and connected to the outer

25 lightening rod pattern;

a shorting bar connected to the outer lightning rod pattern; and

a fine pattern connecting the inner lightening rod projection to the outer lightening
rod projection, wherein a the fine pattern extends from a center of the inner lightening rod
projection to a center of to the outer lightening rod projection.

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an inner lightning rod pattern connected to pad pattern;

an outer lightning rod pattern;

a shorting bar connected to the outer lightning rod pattern; and

a fine pattern connecting the inner lightning rod projection to the outer

corresponding to a location of the fine pattern on the first photo mask.